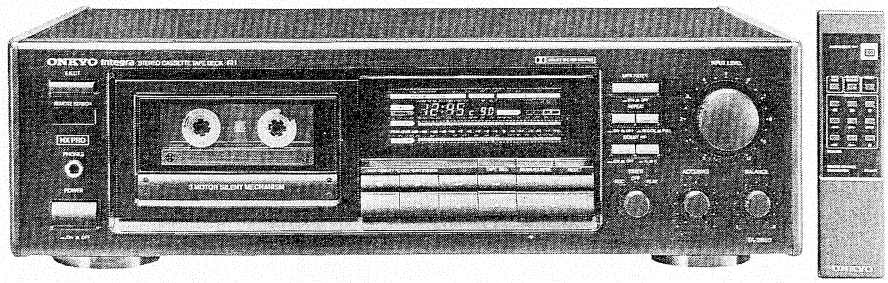
Ref. No. 3409

ONKYO SERVICE MANUAL

STEREO CASSETTE TAPE DECK MODEL TA-2850



Black and Silver model

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

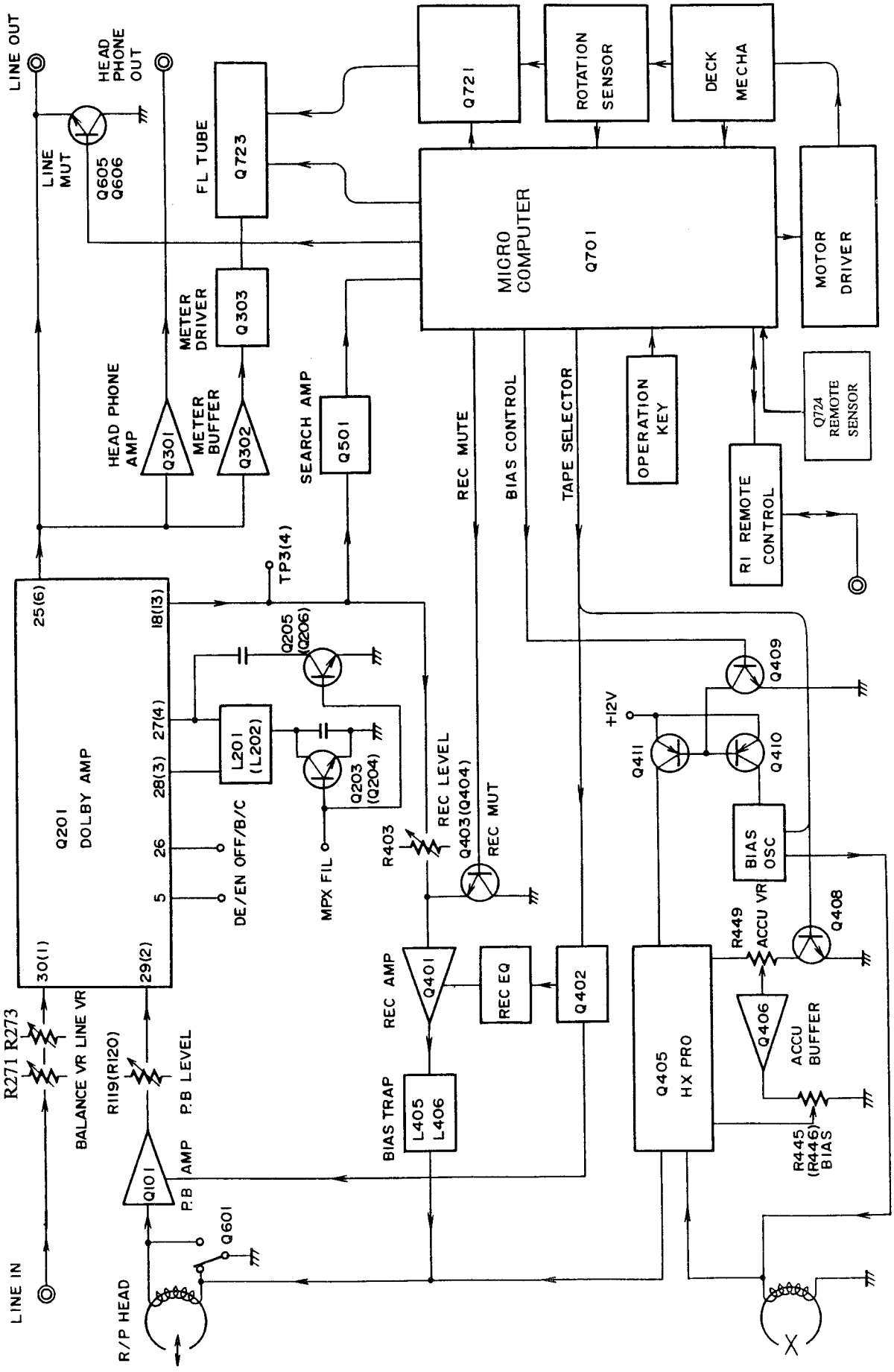
ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

Track Format:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8cm/sec. (1-7/8 i.p.s.)
Wow and Flutter:	0.05% (WRMS) 0.11% (DIN)
Frequency Response:	20—17,000Hz (Normal) (30—16,000Hz ±3dB) 20—18,000Hz (High) (30—17,000Hz ±3dB) 20—19,000Hz (Metal) (30—18,000Hz ±3dB)
S/N Ratio:	58dB (metal tape, Dolby NR off) A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR. A noise reduction of 20dB at 5kHz is possible with Dolby C NR.
Input Jacks:	Line IN: 2 input sensitivity: 80mV input impedance: 50kohms
Outputs:	Line OUT: 2 Standard output level: 500mV (0dB) Optimum load impedance: over 50kohms Headphone jack: 1 Optimum load impedance: 8 to 200 ohms
Motors:	DC servo motor: 1 DC motor: 2
Heads:	REC/PB: Special Hard Permalloy×1; Erase head: Ferrite×1
Power Supply Rating:	European models: AC 230V, 50Hz
Power Consumption:	22 watts
Dimensions:	455(W)×131(H)×368(D)mm (17-15/16" ×5-3/16" ×14-1/2")
Weight:	6.3kg. (13.9lbs.)

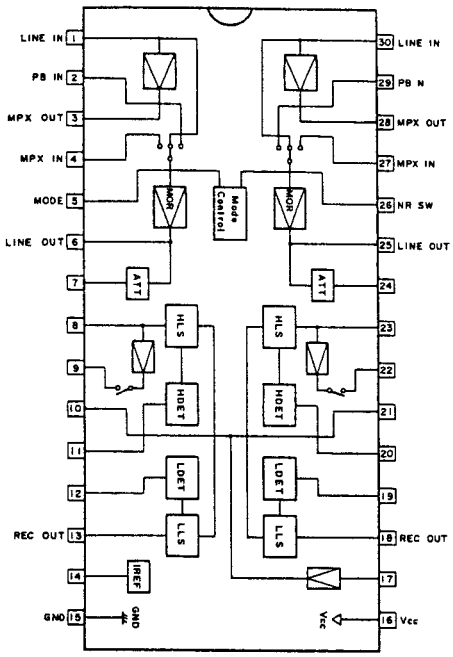
Specifications and external appearance are subject to change without notice because of product improvements.

BLOCK DIAGRAM

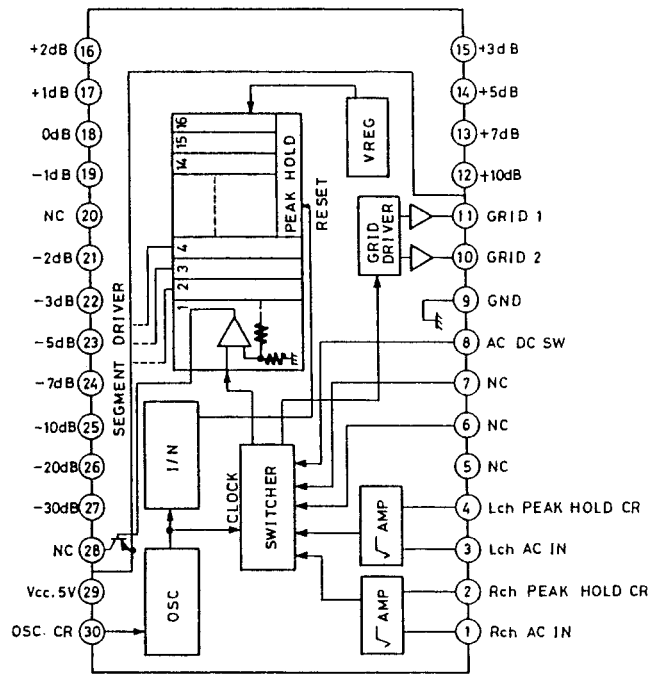


IC BLOCK DIAGRAM

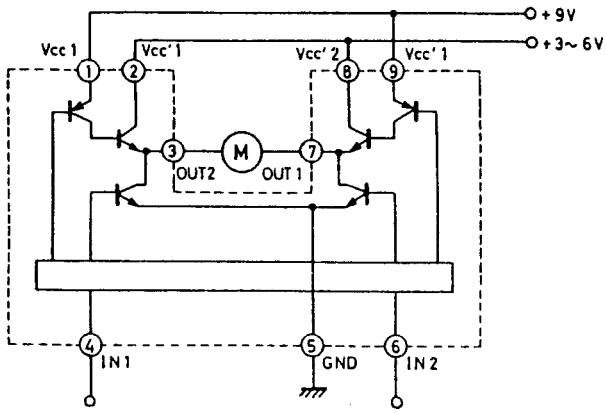
CXA1331S (DOLBY NR)



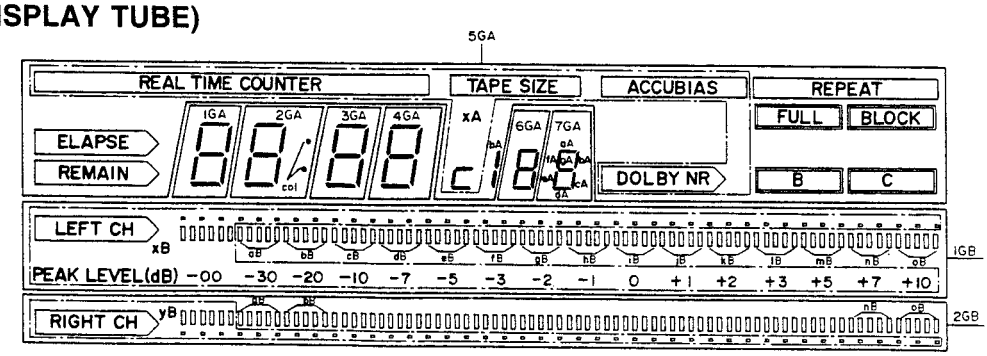
BA6800AS (METER DRIVE)



M54544AL (MOTOR DRIVE)



BG802G (DISPLAY TUBE)



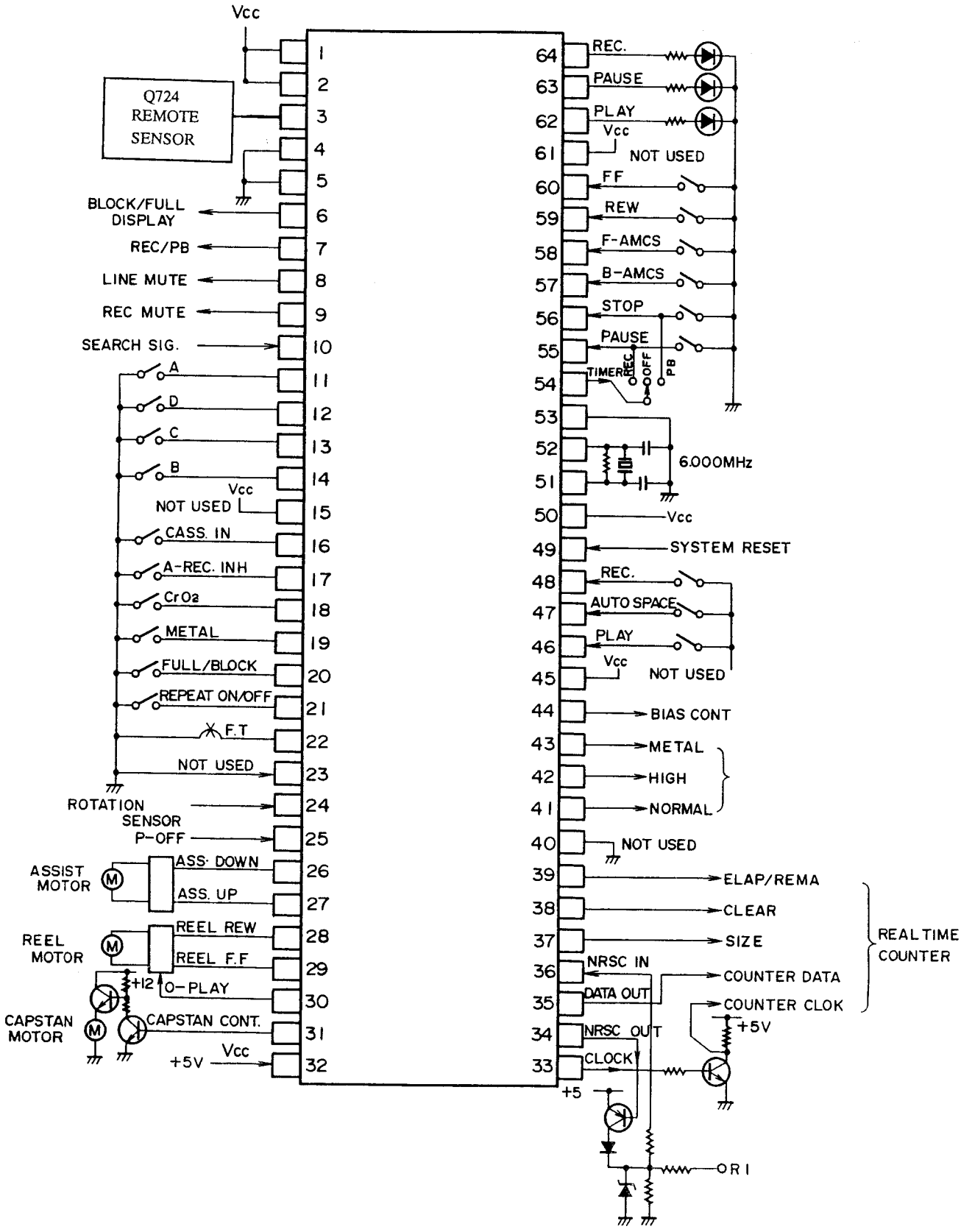
PIN CONNECTION

PIN NO.	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	nB	oB	yB	xB	2GB	1GB	NC	NC	NC	NC	hA	gA	fA	eA	dA	cA	bA	aA	jA	iA	7GA	6GA	5GA	4GA	3GA	2GA	1GA	xA	pA	oA	nA	mA	ℓA	kA	rA	qA	NP	NP	F1	F1

PIN NO.	57	56	55	54	53	52	51	60	49	48	47	46	45	44	43	42	41
CONNECTION	F2	F2	NP	NP	aB	bB	cB	dB	eB	fB	gB	hB	iB	jB	kB	ℓB	mB

Note 1.)NP·····No pin.
2.)NC·····No connection
3.)F1,F2·····Filament
4.)1GA~7GA·····Grid
5.)1GB~2GB·····Grid

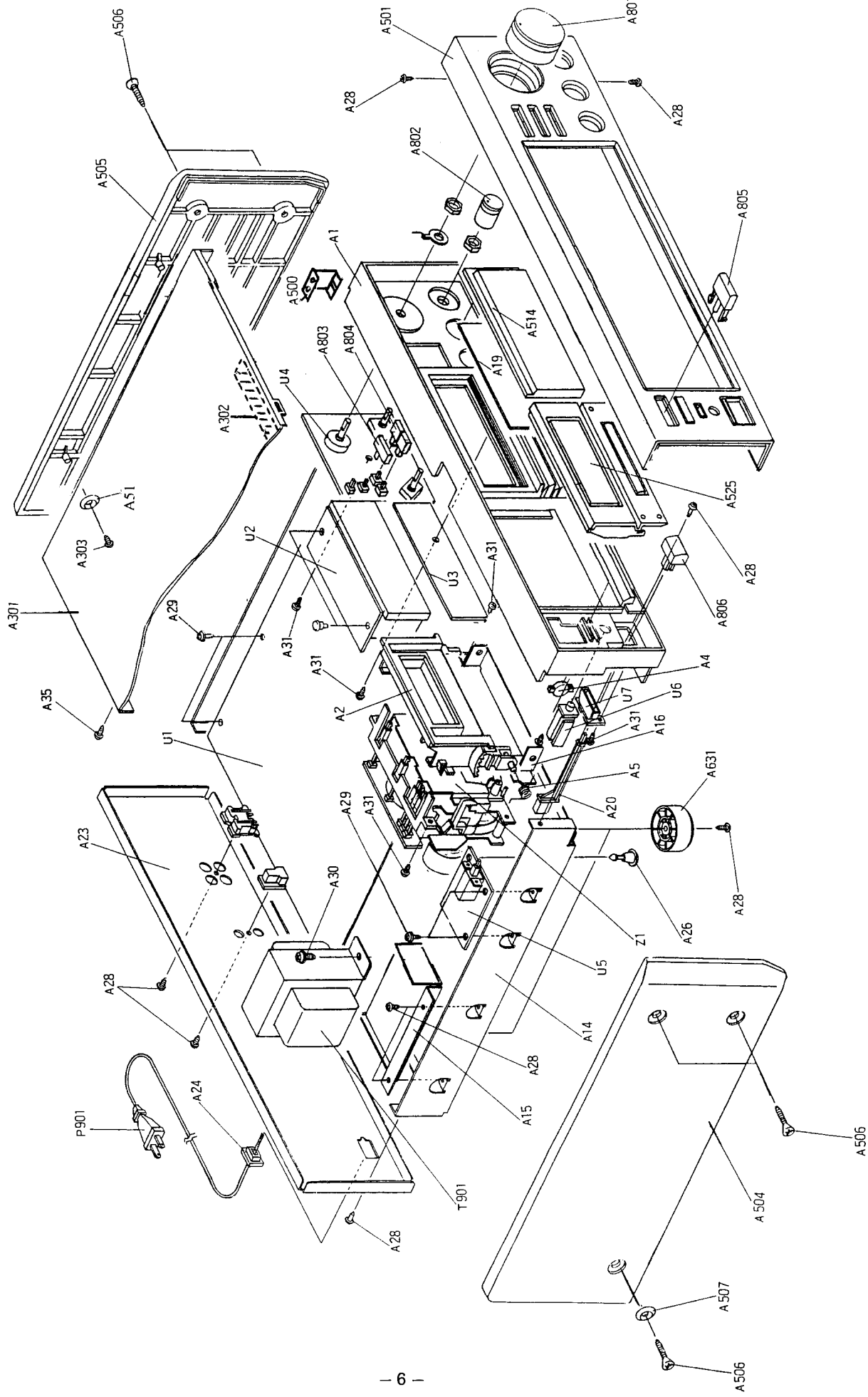
MICROCOMPUTER (HD614049SB16)
(HD614049SB10)



MICRO COMPUTER (HD614049SB16)

Pin No.	Name	Function
1	NOT USED	
2	NOT USED	
3	REMOTE SENSOR	Remote control transmitter signal input
4	NOT USED	
5	NOT USED	
6	BLOCK/FULL DISPLAY	Block repeat/full repeat display output
7	REC/$\overline{PB}$	Recording/playback select output
8	LINE MUTE	Line muting output
9	REC MUTE	Recording muting output
10	SEARCH SIG.	Search signal input
11~14	MECHA. POSITION $\overline{A}$~$\overline{D}$	Mecha position sensor switch input
15	NOT USED	
16	$\overline{CASSETTE\ IN}$	Cassette tape sensor switch input
17	SIDE-A REC. INHIBITING	Side-A record inhibit pin sensor
18	CrO_2 SWITCH	Tape type sensor switch input
19	METAL SWITCH	Tape type sensor switch input
20	REPEAT $\overline{BLOCK}$/FULL	Block/full repeat select switch input
21	REPEAT $\overline{ON}$/OFF	Repeat ON/OFF select switch input
22	$\overline{F.T.}$	Test terminal
23	NOT USED	
24	ROTATION SENSOR	Reel rotation sensor input
25	P-OFF	Power off detection input
26	ASSIST DOWN	Assist motor drive output
27	ASSIST UP	Assist motor FWD-PLAY drive output
28	REEL REW	Reel motor REW rotation control output
29	REEL FF	Reel motor FF rotation control output
30	O-PLAY	Reel motor rotation torque
31	CAPSTAN CONTROL	Capstan rotation control output
32	V_{CC}	+5V
33	CLOCK	Master-slave communication clock output
34	$\overline{NRSC\ OUT}$	Serial code reciprocal control signal output
35	DATA OUT	Master-slave communication data output
36	NRSC IN	Serial code reciprocal control signal input
37	$\overline{COUNTER\ SIZE}$	Tape size select output
38	$\overline{COUNTER\ CLEAR}$	Tape counter output
39	$\overline{COUNTER\ ELAP/REMA}$	Tape elap/rema select output
40	NOT USED	
41	NORMAL	Normal tape end detection output
42	HIGH	High tape end detection output
43	METAL	Metal tape end detection output
44	BIAS CONTROL	Bias oscillator control output
45	NOT USED	
46	$\overline{PLAY\ KEY}$	Play key input
47	$\overline{AUTO\text{-}SPACE\ KEY}$	Auto-space key input
48	$\overline{REC\ KEY}$	Record key input
49	SYSTEM RESET	Computer system reset
50	$\overline{TEST}$	Computer test input (normally used at V_{CC})
51, 52	OSC1, OSC2	System clock oscillator terminal
53	GND	GND
54	TIMER IN	Timer play/record input
55	$\overline{PAUSE\ KEY}$	Pause key input
56	$\overline{STOP\ KEY}$	Stop key input
57	$\overline{B\text{-}AMCS\ KEY}$	Side-B AMCS key input
58	$\overline{F\text{-}AMCS\ KEY}$	Side-A AMCS key input
59	$\overline{REW\ KEY}$	REW key input
60	$\overline{FF\ KEY}$	FF key input
61	NOT USED	
62	PLAY LED	Play display output
63	PAUSE DISPLAY	Pause display output
64	REC. LED	Record display output

CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTIONTA
A1	27110655B	FRONT BRACKET AS (B)
	27110656B	FRONT BRACKET AS (S)
A2	28400568B	FRAME AS (CASSETTE)
-a	28400569B	FRAME (CASSETTE)
-b	27180435	SPRING
-c	28140987	CUSHION
A4	28400520	DAMPER
A5	27180454	SPRING
A14	27100247	CHASSIS
A15	27130608E	BRACKET (PT)
A16	27130659A	BRACKET (MECHNISM)
A17	27141404	BRACKET (HD)
A19	28133268	BACK PLATE
A20	27273069A	JOINT (POW)
A23	27121499-2	BACK PANEL
A24	27300750	BUSHING (CORD)
A26	27190480	HOLDER (LED)
A28	834430088	TAP-TIGHT SCREW 3TTS+8BBC
A29	831130088	TAP-TIGHT SCREW 3TTW+8B
A30	830440089	TAP-TIGHT SCREW 4TTC+8CBC
A31	833430080	TAP-TIGHT SCREW 3TTP+8PBC
A35	801230	TAPPING SCREW 3STS+8BQBC
A51	87644012	WASHER W4×12FBC
A301	28184490A	TOP COVER
A302	28140837	CUSHION 250×10×.9t
A303	834440088	TAP-TIGHT SCREW 4TTS+8BBC
A500	27141493	BRACKET (S)
A501	1N117121	FRONT PANEL AS (B)
	1N118121	FRONT PANEL AS (S)
A504	28185371	SIDE BOARD (L)
A505	28185372	SIDE BOARD (R)
A506	837440169	TAP-TIGHT SCREW 4TTT+16CBC
A507	87314008	TOOTH LOCK WASHER M-4B
A514	28191606	CLEAR PLATE
A525	28400720A	CASSETTE LID AS (B)
-a	28400716A	CASSETTE LID (B)
-b	28400718	CASSETTE LID (BODY)(B)
-c	28400722	WINDOW (B)
-d	28194348	COSMETIC PLATE (WINDOW)(B)
A525	28400721A	CASSETTELIDAS (S)
-a	28400717A	CASSETTE LID (S)
-b	28400719	CASSETTE LID (BODY)(S)
-c	28400722	WINDOW (S)
-d	28194348	COSMETIC PLATE (WINDOW)(S)

REF.NO.	PART NO.	DESCRIPTION
A631	27175254	LEG AS
A801	28324475	KNOB (INP) (B)
	28324476	KNOB (INP) (S)
A802	28324150-1	KNOB (LEV) (B)
	28324151	KNOB (LEV) (S)
A803	28324477	KNOB (MPX) (B)
	28324478	KNOB (MPX) (S)
A804	28324479	KNOB (PUSH) (B)
	28324480	KNOB (PUSH) (S)
A805	28323985	KNOB (EJ) (B)
	28324337	KNOB (EJ) (S)
A806	28324397	KNOB AS (POW)(B)
	28324398	KNOB AS (POW)(S)
P702A	2009990105	NSAS-18P0162
P901 ⚠	253149	AC CORD,AS-CEE
T901 ⚠	2300725A	NPT-1120P
U1	1N115560-4	NAAF-3860-4
U2	1N115566-1	NADIS-4266-1
U3	1N115568-1	NASW-4268-1
U4	1N115567-1	NAETC-4267-1
U5	1N115570-1	NAPS-4270-1
U6	1N115565-4	NAETC-3865-4
U7	1N115571-1	NADG-4271-1
Z1	244141	NDM-133,DECK MECHANISM

NOTE
(S):Silver model
(B):Black model

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PARTS LIST

NAAF-3860-4

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Ics	
Q101	222956	NJM-2068D-D
Q201	22240316	CXA1331S
Q301,Q302	22240368	M5218AL
Q401	22240369	M5218AP
Q402	22240240	IR2C30
Q405	222959	μLPC1297CA
Q406	222465	NJM-4558D
Q501	222940	BA335H
Q601	22240147	μLPC1330HA
Q701	22240541	HD614049SB16(HD614049SB10)
Q704,Q705	222953	M-54544AL
Q909	222465	NJM-4558D
Q910	222780055MIT	78M05
	Transistors	
Q103,Q104	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q203-Q207	221281 or	DTC114YS or
	2213570	RN1207
Q208	2212600 or	DTA124ES or
	2213580	RN2203
Q403,Q404	2212794 or	2SD1468-R or
	2212795	2SD1468-S
Q407,Q408	221282 or	DTC144ES or
	2213560	RN1204
Q409	221281 or	DTC114YS or
	2213570	RN1207
Q410,Q411	2211455	2SA1015-GR
Q412	2201540	2SD947
Q413	221282 or	DTC144ES or
	2213560	RN1204
Q414,Q415	2211544	2SC1959-Y
Q602	221281 or	DTC114YS or
	2213570	RN1207
Q603	2211455	2SA1015-GR
Q605,Q606	2211706	2SD655-F
Q702	221281 or	DTC114YS or
	2213570	RN1207
Q703	2212855 or	2SB1068-U or
	2212853	2SB1068-K
Q705	2202115 or	2SD2061-E or
	2202116	2SD2061-F
Q707	221281 or	DTC114YS or
	2213570	RN1207
Q708	2201540	2SD947
Q710	2211255	2SC1815-GR
Q711	221282 or	DTC144ES or
	2213560	RN1204
Q712	2211255	2SC1815-GR
Q713	221282 or	DTC144ES or
	2213560	RN1204
Q714	2212600 or	DTA124ES or
	2213580	RN2203
Q715	221281 or	DTC114YS or
	2213570	RN1207
Q901,Q902	2212304 or	2SK381-D or
	2211945	2SK246-GR
Q903	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q904	2213354 or	2SA933S-R or
	2213355	2SA933S-S

CIRCUIT NO.	PART NO.	DESCRIPTION
Q905	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q906	2213354 or	2SA933S-R or
	2213355	2SA933S-S
Q907	2201285 or	2SD882-Q or
	2201286	2SD882-P
Q908	2201275 or	2SB772-Q or
	2201276	2SB772-
Q911	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q912	2202115 or	2SD2061-E or
	2202116	2SD2061-F
Q913,Q914	2212600 or	DTA124ES or
	2213580	RN2203
Q915	2211455	2SA1015-GR
	Diodes	
D201,D202	224150753	05AZ7.5Z
D601,D602	223163	1SS133
D605	223124 or	1S2473 or
	223150	US1040
D606	223124 or	1S2473 or
	223150	US1040
D701	224150683	05AZ6.8Z
D704	224150562	05AZ5.6Y
D705	223163	1SS133
D706	224150512	05AZ5.1Y
D901-D904	22380029	HER102
D905-D909	22380046	AM01Z
D910,D911	223163	1SS133
D912	224150512	05AZ5.1Y
D913	224151303	05AZ13Z
D914	224450623	MTZ6.2C
D915	223163	1SS133
D916	224152001	05AZ20X
D917	224150512	05AZ5.1Y
	Coils	
L201,L202	233408	NMC-6080
L401,L402	231086	NCH-2134
L403,L404	231081	NCH-2129
L405,L406	233314	NCH-2097
L407,L408	231127	NCH-4183
L409	231063	NLO-2037
X701	3010149	CST6.00MGW
	Capacitors	
C101,C102	372124714	470PF50V,ST
C105,C106	391981017	100μF50V,ELECT.
C117,C118	391984717	470μF50V,ELECT.
C203-C206	391980227	2.2μF50V,ELECT.
C207,C208	391944707	47μF16V,ELECT.
C217,C218	391941017	100μF16V,ELECT
C219	391944707	47μF16V,ELECT.
C225	391980477	4.7μF50V,ELECT.
C227,C228	391944717	470μF16V,ELECT.
C301,C302	391941007	10μF16V,ELECT.
C411,C412	391944707	47μF16V,ELECT.
C413,C414	391981097	0.1μF50V,ELECT.
C415,C416	391941007	10μF16V,ELECT.
C423,C425	391942217	220μF16V,ELECT.
C439,C440	370131014	100PF100V,APS

CIRCUIT NO.	PART NO.	DESCRIPTION
C441,C442	370131514	150PF100V,APS
C448,C449	391941007	10μF16V,ELECT.
C451,C452	391922217	220μF6.3V,ELECT.
C453	391944707	47μF16V,ELECT.
C456	370131234	0.012μF100V,APS
C501	391980227	2.2μF50V,ELECT.
C503	391981097	0.1μF50V,ELECT.
C504	391984797	0.47μF50V,ELECT.
C505	391941007	10μF16V,ELECT.
C601	391941017	100μF16V,ELECT
C605,C607	391980477	4.7μF50V,ELECT.
C701	391941007	10μF16V,ELECT.
C907,C908	391962227S	2200μF35V,ELECT.
C915,C916	391941007	10μF16V,ELECT.
C917	391941017	100μF16V,ELECT
C923	391951027S	1000μF25V,ELECT
C924	3504168	13000μF25V,ELECT.
C925	391980107	1μF50V,ELECT.
C926	391942217	220μF16V,ELECT.
C928,C929	391944707	47μF16V,ELECT.
C931	391980477	4.7μF50V,ELECT.
C932	391980107	1μF50V,ELECT.
C935,C936	391980477	4.7μF50V,ELECT.
	Resistors	
R119,R120	5210218	N06HR20KBD
R403,R404	5210217	N06HR10KBD
R445,R446	5215045	N08HR10KBC
R708	49163392412	3.9KΩ×12,1/10W
R712	441722704F	RS2WBJ27Ω
R730	49163392406	RM1/10IJ 3.9KΩ×6
R901,R902	442520224F	RS1/2WBJ 2.2Ω
R915,R916	442524794F	RS1/2WBJ 0.47Ω
R917	441723904F	RS2WBJ 39Ω
R927	442520104F	RS1/2WBJ 1Ω
	Plug,socket	
P101	25055136	NPLG-6P120
P201	25045338	NPJ-4PDBL189
P202	25050267	NVCT-3P95
P203	25050267	NVCT-3P95
P204	25050270	NSCT-6P98
P302	25050267	NVCT-3P95
P401	25055132	NPLG-2P116
P701	25045172	HSJ-1003-01-020
P702	25055139	NPLG-9P123
P703A	2009990106A	NSAS-18P0163
P705	25050269	NSCT-5P97
P706	25050273	NSCT-9P101
P707	25050272	NSCT-8P100
P708	25050270	NSCT-6P98
P709	25055135	NPLG-5P119
P710	25050267	NVCT-3P95
P711	25050270	NSCT-6P98
P712	25050268	NSCT-4P96
	Miscellaneous	
	27160029	RAD-07,RADIATOR
	27160211	RAD-68,RADIATOR
	27141059	BRACKET
	82143006	3P+6FN(BC),SCREW

NAETC-3865-4

CIRCUIT NO.	PARTS NO.	DESCRIPTION
P301	25045221	HLJ0540-01-410

NADIS-4266-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Ic	
Q303	22240170	BA6800AS
Q721	22240084	HD614128SA41
	Transistors	
Q305,Q306	2213090	DTA114YS
Q722	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
	Displaytube	
Q723	212082	BG-802G
	Ceramicosc	
X702	3010143	CST-3.00MGW
	Capacit ors	
C351,C352	391941007	10μF16V,ELECT.
C353,C354	391942207	22μF16V,ELECT.
C721	391941007	10μF16V,ELECT.
	Resistors	
R351,R352	5215044	N08HR5kBC
R321	49163104415	RM1/10IJ100k×15

NAETC-4267-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Resistors	
R271	5104268	N14RGLC100kMN25Z
R273	5104260	N16RGL 50kA25Z
R459	5104271	N14RLC 5kB25Z
	Switch	
S201-S203	25035611	NPS-122-L573
S601,S602	25035611	NPS-122-L573
S604	25030351	NRSF-113-25SRB

NASW-4268-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Leds	
	D711,D712	225141SEL2213C
D714	225137CG,	SEL2413E-CG,
	225137DG or	SEL2413E-DG or
	225137DY	SEL413E-DY
	Switch	
S701-S711	25035548	NPS-111-S510
S714	25035548	NPS-111-S510
	Holder	
	27190764A	HOLDER(LED-4)

NADIS-4269-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	LED	
D921	225142	SEL2913k

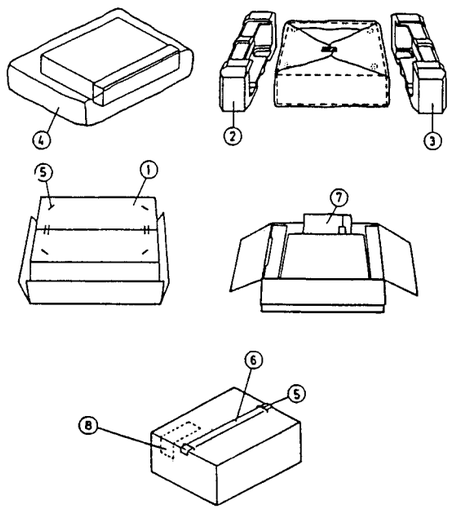
NAPS-4270

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C901	3500065A	0.01μFAC400V/125V,IS
S901	25035558	NPS-111-L520P,SWITCH

NADG-4271-1

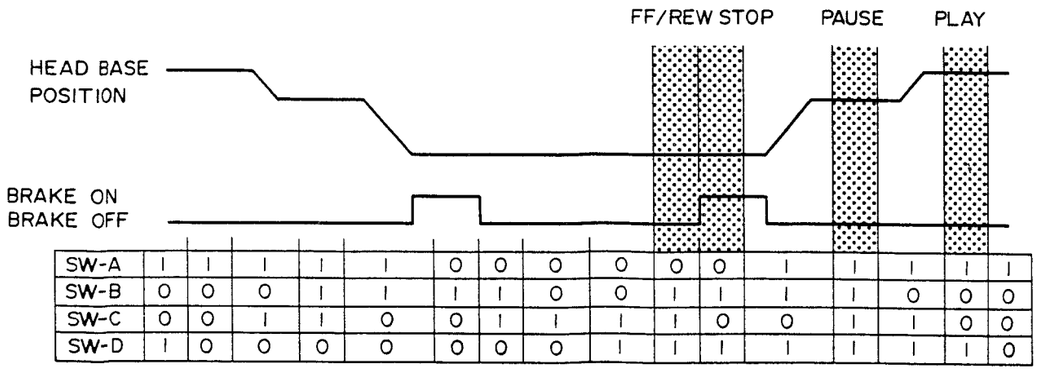
CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q724	24130003	GP1U50XS

PACKING VIEW



REF.NO.	PART NO.	DESCRIPTION
1	29052289-1	Naster carton box (Black model)
	29052289-2	Master carton box (Silver model)
2	29091518A	Pad (L)
3	29091519A	Pad (R)
4	29095012-1	Protection sheet
	29100105	620×50 Poly bag
5	282301	Sealing hook
6	29110071-1	Damplon tape
7	**Accessary bag ass'y**	
	29341666	Instruction manual
	2010098A	Connection cable
	29100006A	350×250 Poly bag
	29365020E	Warranty card
	24140214	RC-214K, remocon unit
	3010124	UM-4, batteries

MECHANICAL POSITION CODE



SW-A	I	I	I	I	I	O	O	O	O	O	O	I	I	I	I	I
SW-B	O	O	O	I	I	I	I	O	O	I	I	I	I	O	O	O
SW-C	O	O	I	I	O	O	I	I	I	I	O	O	I	I	O	O
SW-D	I	O	O	O	O	O	O	O	I	I	I	I	I	I	I	O

NOTE

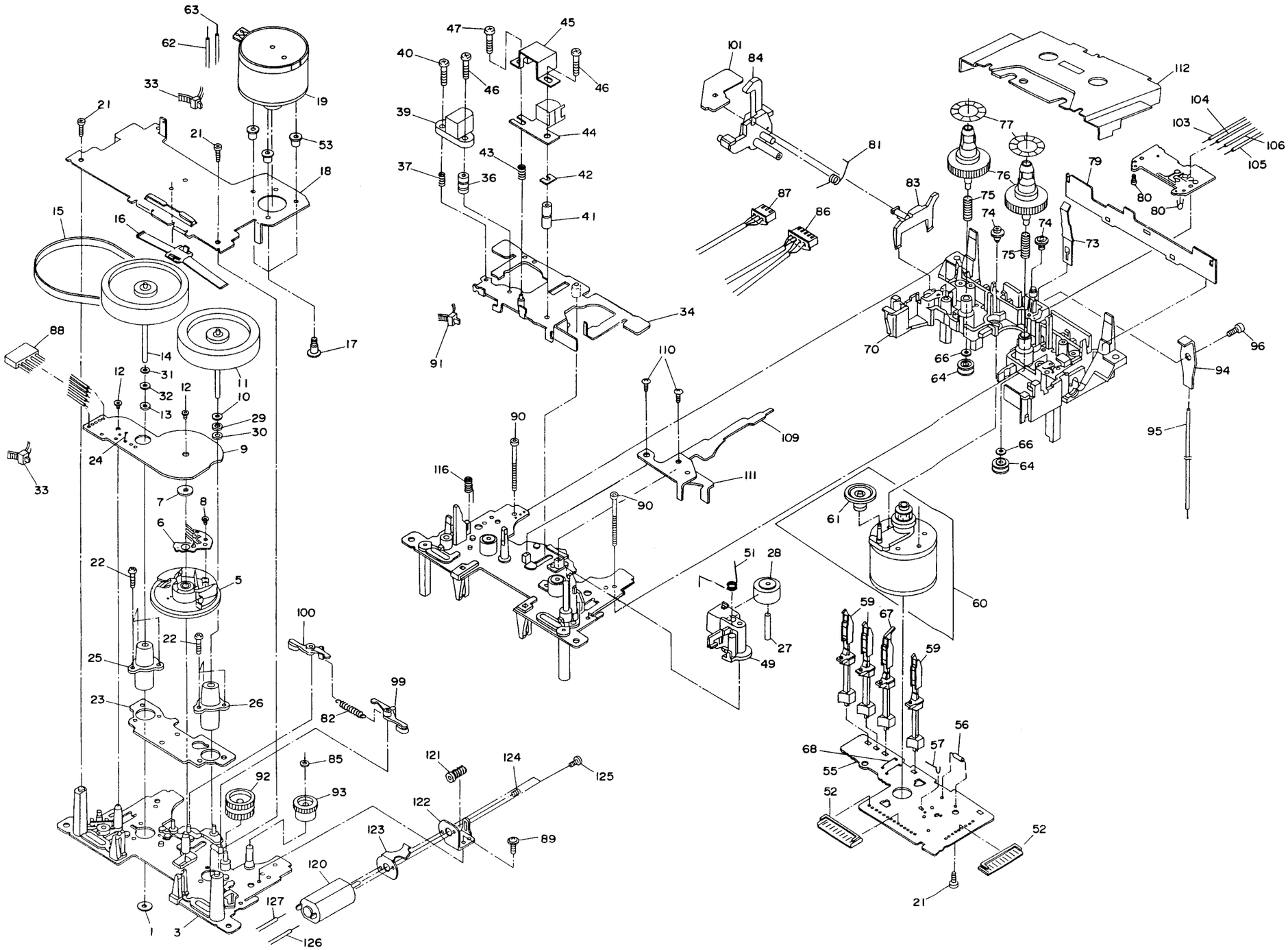
I : High level

O : Low level

TAPE MECHANISM PART LIST

REF.NO.	PART NO.	DISCRIPTION
1	24610673	WASHER
3	24611477	MECHANISM CHASSIS
5	24602433	CAM
6	24606282	CONTROL P.C.B.
7	24611337	WASHER 7×8×.5
8	82112003	PAN-HEAD SCREW M2+3
9	24606431	P.C.B. AS
10	24611464	WASHER 2.3×4.7×0.5
11	24602529	FLYWHEEL (DUMMY)
12	24609043	TAPPING SCREW M2×4.5
13	24611465	WASHER 2.6×7×0.13
14	24602530	FLYWHEEL
15	24602436	BELT
16	24611326B	THRUST SPRING
17	24609041	PAN HEAD SCREW M2.6×1.8
18	24611438	BRACKET (MOTOR)
19	24601254	CAPSTAN MOTOR AS
21	833126082	TAPPING SCREW M2.6×8
22	833120047	SCREW 2TTP+4S
23	24611466	PROTECTOR
25	24611467	STAND AS (CAPSTAN)
26	24611468	STAND AS (CAPSTAN)
29	24611469	WASHER 2.3×4.7×0.2
30	24611470	WASHER 2.3×7×0.13
31	24611471	WASHER 2.5×7×0.2
32	24611472	WASHER 2.6×4.7×0.2
34	24611473	HEAD BASE AS
36	24611474	POST (E HEAD)
37	24605754	SPRING
39	24600106	E HEAD
40	24609044	BIND SCREW M2×13
41	24611478	SPACER
42	24610573	SPACER t0.06
	24611044	SPACER t0.1
	24611479	SPACER t0.15
43	24605755	SPRING
44	24600107	R/P HEAD
45	24611475	COVER (HEAD)
46	24609045	BIND SCREW M2×12
47	24609046	SCREW M2×6
49	24602524	PINCH ROLLER AS (R)
51	24605672A	SPRING (PINCH ROLLER) R
53	24611439	CUSHION
55	24606284	P.C.B.
57	24606357	LEAD (GND)
59	24606285	LEAF SWITCH
60	24601230A	REEL MOTOR AS
61	24602442A	IDLER GEAR
62	24606371	LEAD WIRE
63	24606370	LEAD WIRE
64	24602443	BRAKE PULLEY
67	24610952	WASHER 2.6×5.5×0.13
68	24606368A	LEAF SWITCH
69	24606423	JUMPER LEAD
71	24611440	SUB CHASSIS
73	24605756	SPRING
74	24609011	SPECIAL SCREW M2.6×1.6
75	24605675	SPRING
76	24602525	REEL AS
77	24611334	REFLECTOR (5P)
79	24611397A	HOLDER (CASSETTE)
80	24606288	PHOT REFLECTOR NLJ5161KF1
81	24605751	SPRING (L)
82	24605744	SPRING
83	24603355	LEVER
84	24603356	EJECT LEVER (L)
85	24611461	WASHER 5×2.6×0.5
86	24606439	LEAD WIRE AS L460
87	24606440	LEAD WIRE AS L520
88	24606437	LEAD WIRE AS L230
89	24609036	PAN HEAD SCREW
90	24609037	PAN HEAD SCREW M2.6×28
92	24602526A	IDLER GEAR
93	24602527	GEAR
94	24611462	PLATE AS (GND)
96	833126057	TAP-TIGHT SCREW M2.6+5
99	24603383	BRAKE LEVER AS (L)
100	24603384	BRAKE LEVER AS (R)
101	24603352	EJECT LEVER
103	24606365	LEAD WIRE (BLUE)
104	24606366	LEAD WIRE (GRAY)
105	24606367	LEAD WIRE (BROWN)
106	24606369	LEAD WIRE (BLACK)
109	24603385	LEVER (B)
110	24609035	TAP-TIGHT SCREW M2×6
111	24603386	LEVER AS
112	24611463	BACK PLATE (CASSETTE)
116	24605746	SPRING
120	24601255	ASSIST MOTOR AS
122	24611442	HOLDER (MOTOR)
123	24611443	OIL CUTTER
124	24609038	SCREW M1.6
125	24609039	PAN HEAD SCREW M2×2.5
126	24606420	LEAD WIRE
127	24606421	LEAD WIRE

TAPE MECHANISM-EXPLODED VIEW



ADJUSTMENT PROCEDURES

PRECAUTIONS

1. Before adjustment, clean the following parts with an alchol moinstend swab.
   - * record/playback head
   - * erase head
   - * pinch roller
   - * capstan
2. Do not use magnetized screwdriver for adjustments.
3. Demagnetize record/playback head with a head demagnetizer.

TEST EQUIPMENT/TOOLS REQUIRED:

Audio oscillator
Digital frequency counter
Oscilloscope
Attenuator
AC voltmeter
Non-magnetic screw driver
Test tapes

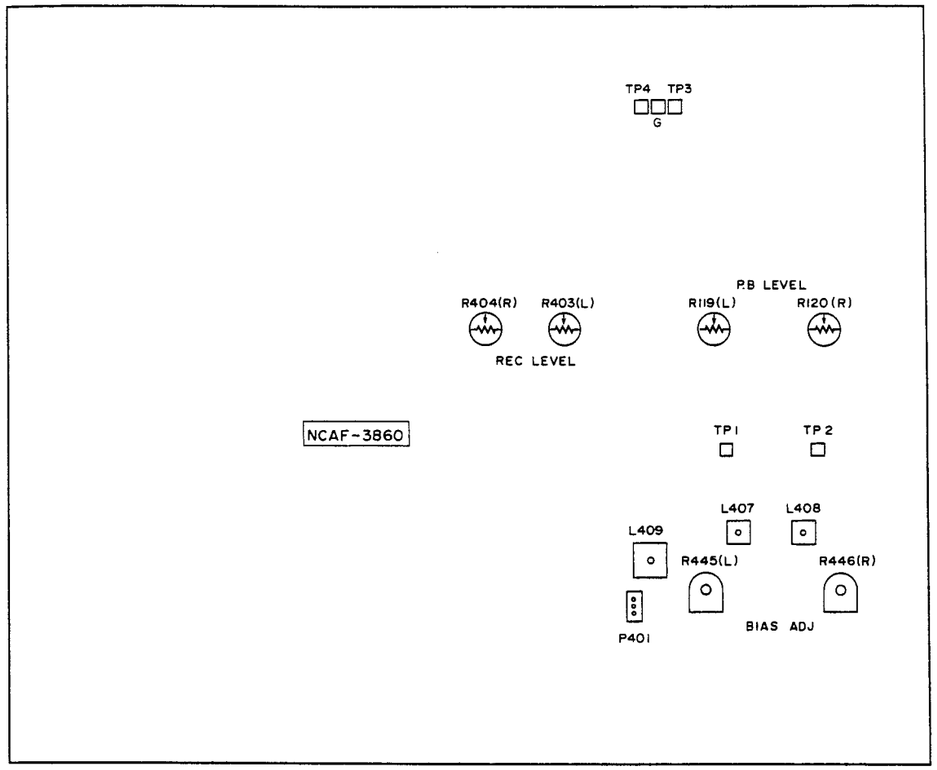
TCC-153	:	10 KHz, –10dB
MTT-111	:	3 kHz, –10dB
MTT-150	:	Dolby level calibration 400Hz, tone 200nWb/m

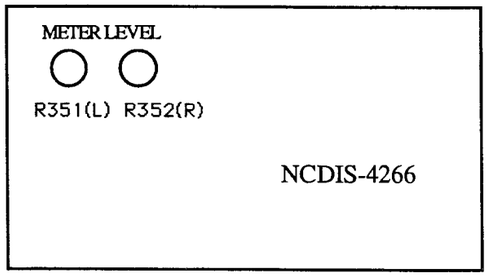
	Item	Connection of instrument	Line input	Test tape	Mode	Output Indicator	Adjustment point	Adjust	Remarks
1	Tape speed	Frequency counter to Line output terminal		MTT-111	PB	Frequency counter	Semi-fixed on the moter	3010±10Hz	
2	Head azimuth	AC voltmeter and oscilloscope to Line output terminal		TCC-153	PB	AC voltmeter	Head azimuth screw	Maximum and same phase at channels L and R	
3	Playback level	AC voltmeter to terminals TP-3 and TP-4		MTT-150	PB	AC voltmeter	R119 (Ch. L) R120 (Ch. R)	388mV	
4	Meter level			MTT-150	PB	Level meter	R351 (Ch. L) R352 (Ch. R)	0db	
5	OSC Block	Frequency counter to P401A read loose coupling		METAL TAPE XS-C60	REC	Frequency counter	L-409	85kHz±2kHz	
6	HX-PRO	AC voltmeter to terminals TP-1 and TP-2		METAL TAPE	REC	AC voltmeter	L-407 (Ch. L) L-408 (Ch. R)	Maximum	R-445 R-446 clockwise
7	Bias current		1kHz, –20dB and 12kHz, –12dB	XL-II C-90	REC/PB	AC voltmeter	R445 (Ch. L) R446 (Ch. R)	Same level at REC/PB	Input VR maximum
8	Record level		1kHz	XL-II C-90	REC	AC voltmeter	Attenutor or AF OSC output	350mV	
					REC/PB	AC voltmeter	R403 (Ch. L) R404 (Ch. R)	Same level at REC/PB	

Blank tape
NORMAL UD-1 C-90
HIGH .....XL-II C-90
METAL .....XS C-60

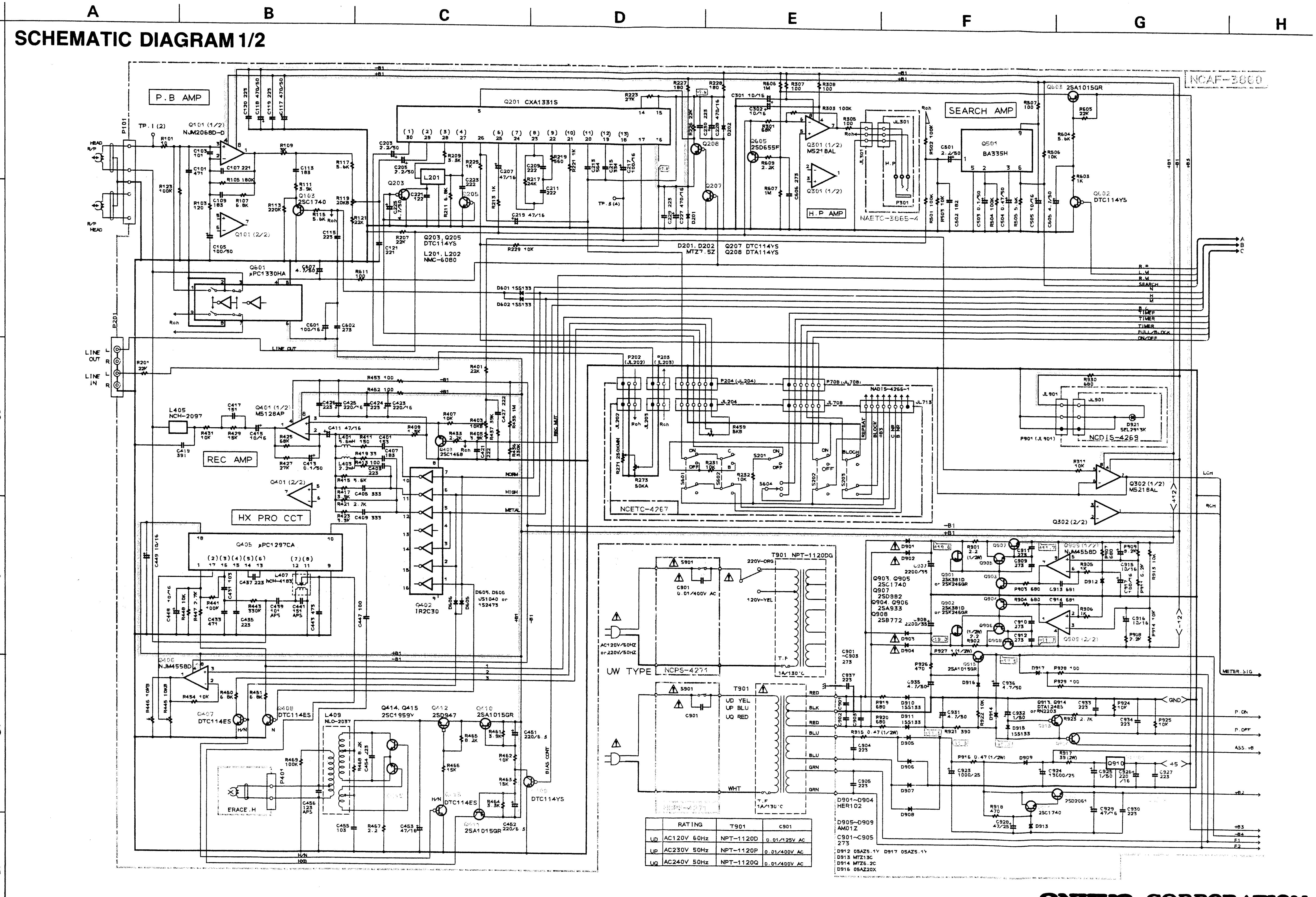
PLAY torque .....30~60g/cm
FF. REW torque .....70~160g/cm
Back tension .....2~7g/cm

ADJUSTMENT POINT





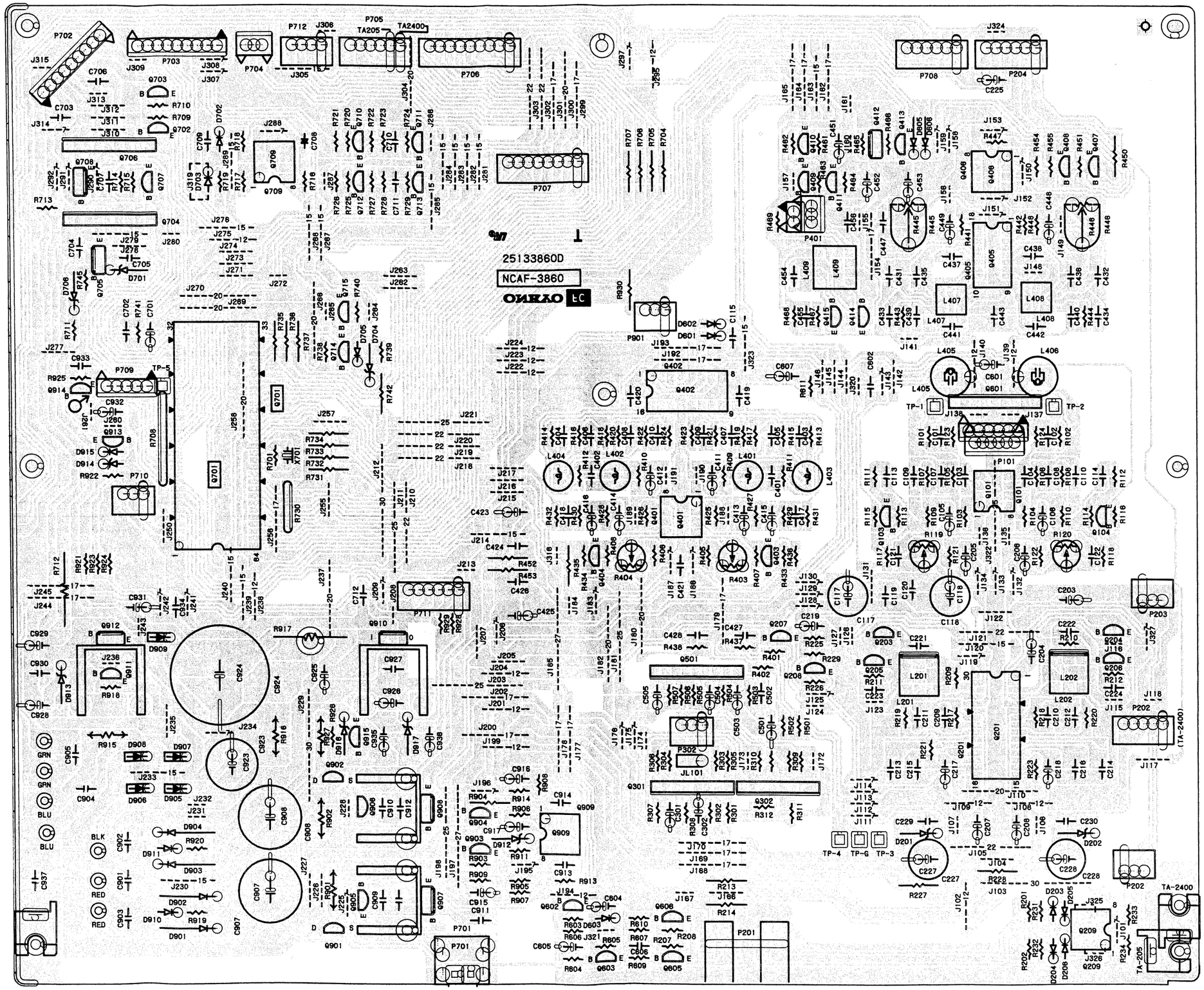
SCHEMATIC DIAGRAM 1/2



	RATING	T901	C901
UD	AC120V 60Hz	NPT-1120D	0.01/125V AC
UP	AC230V 50Hz	NPT-1120P	0.01/400V AC
UQ	AC240V 50Hz	NPT-1120Q	0.01/400V AC

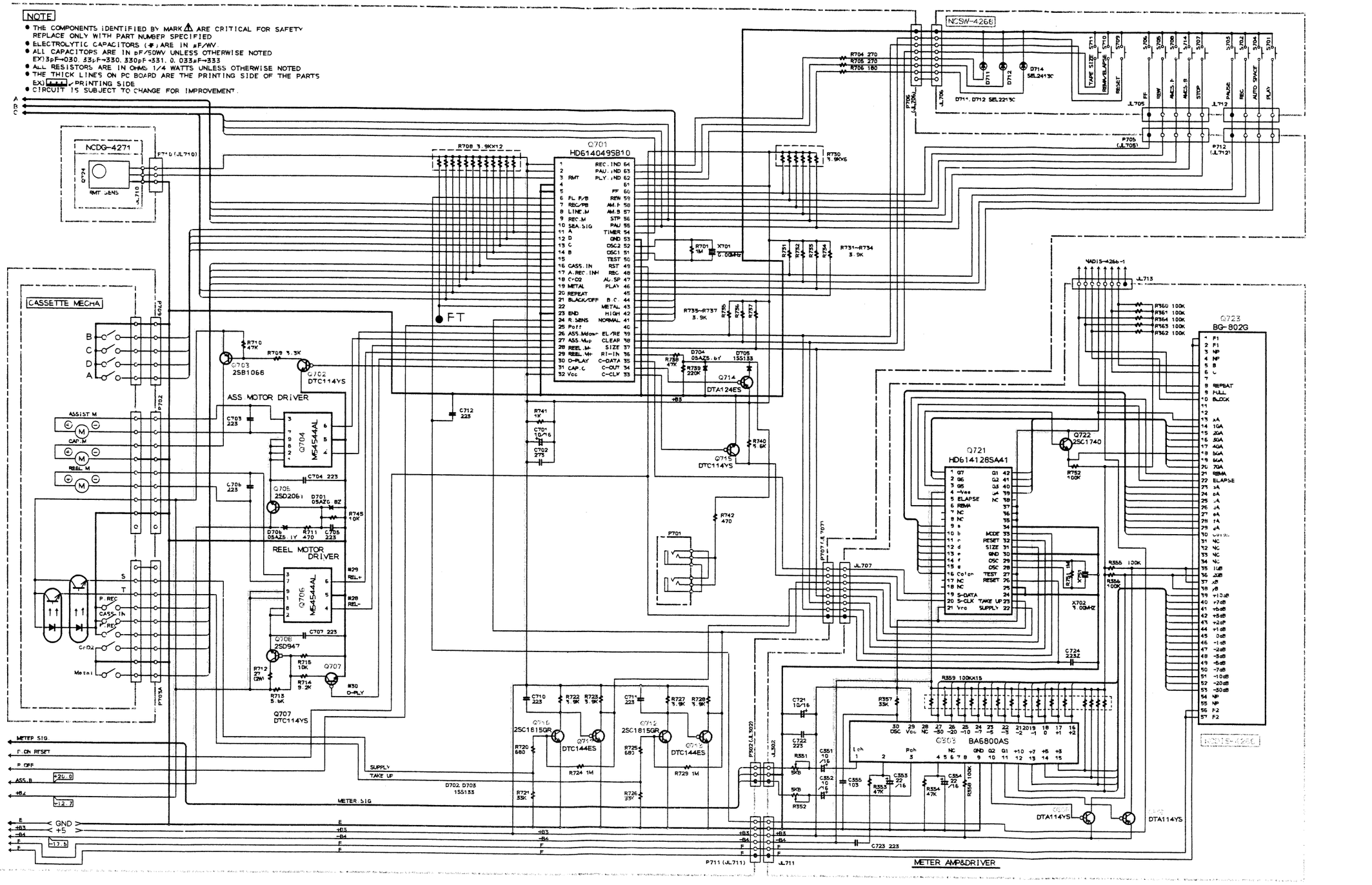
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

NAAF-3860-4



SCHEMATIC DIAGRAM 2/2

NOTE
- THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED
- ELECTROLYTIC CAPACITORS (#) ARE IN μF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED. EX) 3pF→030, 33pF→330, 330pF→331, 0.033μF→333
- ALL RESISTORS ARE IN OHMS, 1/4 WATTS UNLESS OTHERWISE NOTED
- THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS. EX) ▬▬ : PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.



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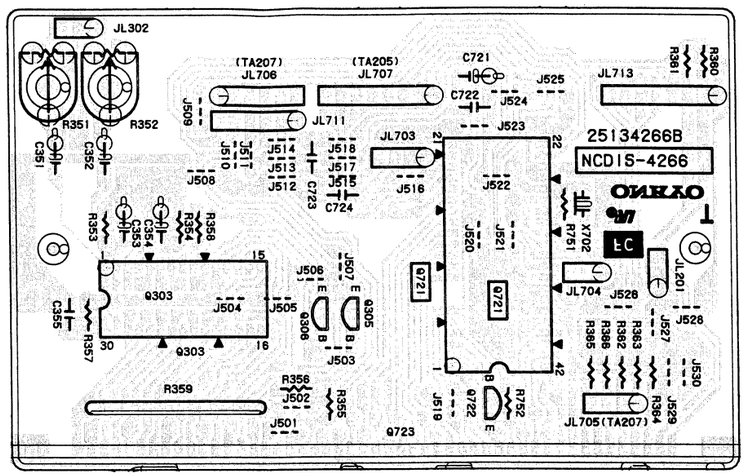
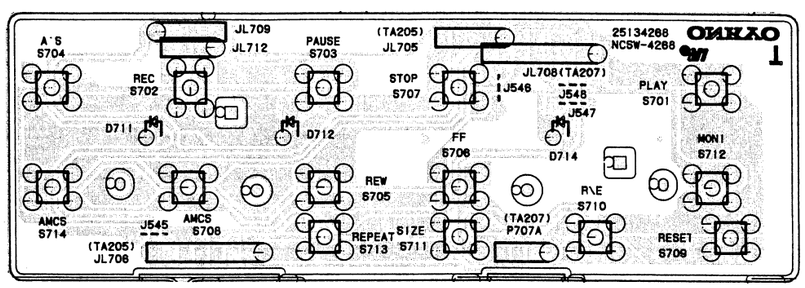
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

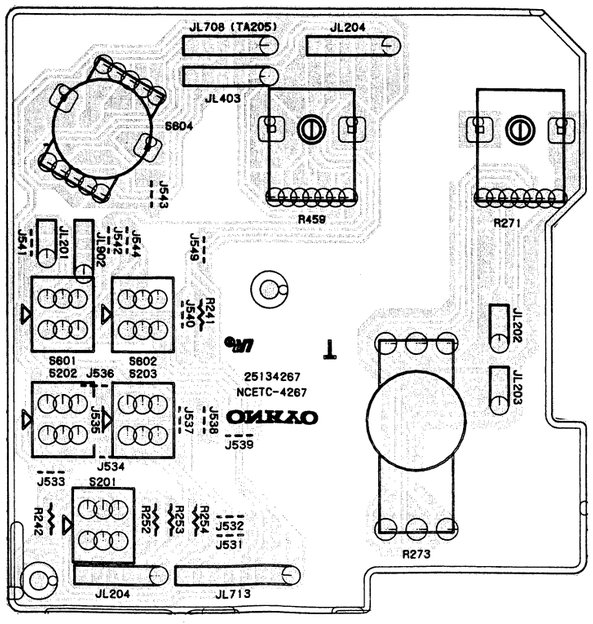
NADIS-4266-1



NASW-4268-1



NAETC-4267-1



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